

## CLAIMS

What is claimed is:

1. A method for increasing scan resolution without varying hardware specification, said method comprising the steps of:

5        obtaining a data quantum based on an indicated scan range and an indicated scan resolution;

          when said data quantum is higher than a threshold of scanner hardware, generating a scanned image of said indicated scan range by using a highest resolution provided by an image sensor; and

10        performing an interpolation to said scanned image for increasing resolution of said scanned image to said indicated scan resolution.

15        2. The method according to claim 1, further comprising a step of performing a scan operation to said indicated scan range when said data quantum is not higher than said threshold.

20        3. The method according to claim 1, said data quantum being determined by using said highest resolution provided by said image sensor, bytes for color illustrations to each pixel, and said indicated scan range.

25        4. The method according to claim 1, said image sensor being a charge coupled device, a contact image sensor, or a CMOS sensor.

30        5. The method according to claim 1, said interpolation being performed by using bilinear or bicubic algorithm.

6. The method according to claim 1, further comprising a pre-scan step for generating a pre-scan image of a document sheet used for selections to said indicated scan range and said indicated scan resolution.

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7. A computer-readable storage medium for storing a method for increasing scan resolution without varying scanner hardware specifications, said computer-readable storage medium having computer executable instructions for performing steps comprising:

5 obtaining a data quantum based on an indicated scan range and an indicated scan resolution;

when said data quantum is higher than a threshold of scanner hardware, generating a scanned image of said indicated scan range by using a highest resolution provided by an image sensor; and

10 performing an interpolation to said scanned image for increasing resolution of said scanned image to said indicated scan resolution.

8. The computer-readable storage medium according to claim 7 comprising:

15 an interpolation program module for storing computer executable instructions for performing said interpolation;

data quantum determination module for storing computer executable instructions for determining said data quantum; and

20 user interface resource module for storing resource codes used by operating interfaces, wherein said operating interfaces are displayed for selections to said indicated scan range and said indicated scan resolution.

9. The computer-readable storage medium according to claim 7, further comprising computer executable instructions for performing scan operations to said indicated scan range by using said indicated scan resolution when said data quantum is not higher than  
25 said threshold.

10. The computer-readable storage medium according to claim 7, said data quantum being determined by using said highest resolution provided by said image sensor, bytes for color illustrations to each pixel, and said indicated scan range.

11. The computer-readable storage medium according to claim 7, said image sensor being a charge coupled device, a contact image sensor, or a CMOS sensor.

12. The computer-readable storage medium according to claim 7, said interpolation  
5 being performed by using bilinear or bicubic algorithm.

13. The computer-readable storage medium according to claim 7, further comprising  
computer executable instructions for generating a pre-scan image of a document sheet  
used for selections to said indicated scan range and said indicated scan resolution.

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14. A scanner electrically coupled with a computer host that may generate scanned  
images having scan resolutions higher than a highest scan resolution provided by said  
an image sensor of said scanner without varying scanner hardware specification, said  
scanner comprising:

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scan unit for generating a scanned image; and

scanner resident module for storing computer executable instructions  
comprising:

an interpolation program module for storing computer executable instructions  
for performing image interpolations;

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data quantum determination module for storing computer executable  
instructions for determining a data quantum that is going to be processed; and

user interface resource module for storing resource codes used by operating  
interfaces, wherein said operating interfaces are displayed for selections to an indicated  
scan range and an indicated scan resolution;

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wherein a processor of said computer host executes said computer executable  
instructions of said data quantum determination module to determine whether said data  
quantum arisen by said indicated scan range and indicated scan resolution is higher  
than a threshold of scanner hardware, said processor executing said computer  
executable instructions of said interpolation program module to perform interpolation

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to a scanned image for increasing a scan resolution of said scanned image to said

indicated scan resolution.

15. The scanner according to claim 14, said scanned image that is interpolated being generated by using a highest scan resolution provided by said image sensor to said indicated scan range.

16. The scanner according to claim 14, said scan unit performing a scan operation to said indicated scan range by using said indicated scan resolution when said data quantum is not higher than said threshold.

17. The scanner according to claim 14, said data quantum being determined by using said highest resolution provided by said image sensor, bytes for color illustrations to each pixel, and said indicated scan range.

18. The scanner according to claim 14, said image sensor being a charge coupled device, a contact image sensor, or a CMOS sensor.

19. The scanner according to claim 14, said interpolation being performed by using bilinear or bicubic algorithm.

20. The scanner according to claim 14, said scan unit performing a pre-scan operation for generating a pre-scan image of a document sheet used for selections to said indicated scan range and said indicated scan resolution.